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09/320,349	05/26/1999	DONALD SCOTT WEDGE	019474-00010	4586

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EXAMINER
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MCCHESNEY, ELIZABETH A

ART UNIT	PAPER NUMBER
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2644

DATE MAILED: 02/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

11

# Office Action Summary

Application No.

09/320,349

Applicant(s)

WEDGE, DONALD SCOTT

Examiner

Elizabeth A McChesney

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18-22 is/are allowed.
- 6) ☒ Claim(s) 1-9, 12 and 14-16 is/are rejected.
- 7) ☒ Claim(s) 6, 10, 11, 13 and 17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

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## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

2. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Regarding claim 1, the word "sufficient" renders the claim indefinite because it doesn't provide a specific amount or quantity and is unclear to what degree of limitation the word pertains to.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. **Claims 1, 2, 4, 7-9 and 15** are rejected under 35 U.S.C. 102(b) as being anticipated by Begault (US Patent No. 5,438,623).

Regarding **claim 1**, Begault discloses imposing spatial cues to a plurality of audio inputs. Begault further discloses 10<sub>1</sub>-10<sub>4</sub> as a plurality of separate devices capable of receiving four separate audio signals for example, four different radio communications channel frequencies (col. 3-lines 41-46). Therefore Begault reads on receiving a first

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radio transmission, at a first carrier frequency  $f_1$  (see figure 1). Begault further discloses imparting a first spatial cue  $16_1$ , which produces a right and left signal. Begault further discloses receiving a second radio transmission with a second carrier frequency  $f_2$  wherein a second special cue  $16_2$  is applied and produces a second right and left signal. Begault further discloses providing the first and second right audio signal to a right channel summer to distribute to a right transducer (headphone speaker) and a first and second left audio signal to a left channel summer to distribute to a left transducer (headphone speaker). Begault further discloses a context switching system that separates multiple sound sources into different point sources so that a primary audio stream of interest can be easily differentiated from peripherally monitored audio streams of secondary interest (col. 1-lines 49-56). Begault further discloses a person can listen to voicemail while continuing to monitor an ongoing discussion in a conference call (col. 2-lines 13-16). Therefore it is inherent to one of ordinary skill in the art that this would provide "sufficient" differentiation between the first and second audio signals for the listener to distinguish between them wherein the listener could focus on the primary source over the secondary source. Further, when listening to voicemail and a conference call via a telephone line, position is not a factor as they are both being transmitted via one line. Begault merely uses the terms "foreground" and "background" as terms of priority not of location of sound, thus providing a differentiation cue for providing a higher magnitude playback level for one of higher priority (col. 2-lines 63-67 and col. 3-lines 1-14).

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Regarding **claim 2**, Begault discloses the capability of receiving, for example, four radio communications channel frequencies wherein it is inherently implied that radio communication is well known in the art as a continuous broadcast (col. 3-lines 44-45).

Regarding **claim 4**, Begault discloses the special cue does provide channel separation and thus outputs a separate right and left signal (see figure 1).

Regarding **claim 7**, Begault discloses imposing spatial cues to a plurality of audio inputs. Begault further discloses  $10_1$ - $10_4$  as a plurality of separate devices capable of receiving four separate audio signals for example, four different radio communications channel frequencies (col. 3-lines 41-46). Therefore Begault reads on receiving a first radio transmission, at a first carrier frequency  $f_1$  (see figure 1). Begault further discloses imparting a first spatial cue  $16_1$ , which produces a right and left signal. Begault further discloses receiving a second radio transmission with a second carrier frequency  $f_2$  wherein a second special cue  $16_2$  is applied and produces a second right and left signal. Begault further discloses providing the first and second right audio signal to a right channel summer to distribute to a right channel output (headphone speaker) and a first and second left audio signal to a left channel summer to distribute to a left channel output (headphone speaker). Begault further discloses a context switching system that spatially separates multiple sound sources into different point sources so that a primary audio stream of interest can be easily differentiated from peripherally monitored audio streams of secondary interest (col. 1-lines 49-56). Begault further discloses a person can listen to voicemail while continuing to monitor an ongoing

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discussion in a conference call (col. 2-lines 13-16). Therefore it is inherent to one of ordinary skill in the art that this would provide sufficient differentiation between the first and second audio signals for the listener to distinguish between them wherein the listener could focus on the primary source over the secondary source. Further, when listening to voicemail and a conference call via a telephone line, position is not a factor as they are both being transmitted over the line. Begault merely uses the "foreground" and "background" terms as terms of priority not of position thus providing the differentiation cue one of a higher magnitude playback level (col. 2-lines 63-67 and col. 3-lines 1-14). In addition to magnitude differentiation, Begault further discloses using time delays, filtering and time and phase shifting vs. frequency for differentiations (see Begault's claim 1).

Regarding **claim 8**, Begault discloses imposing spatial cues to a plurality of audio inputs. Begault further discloses 10<sub>1</sub>-10<sub>4</sub> as a plurality of separate devices capable of receiving four separate audio signals for example, four different radio communications channel frequencies (col. 3-lines 41-46). Therefore Begault reads on receiving a first radio transmission, at a first carrier frequency  $f_1$  (see figure 1). Begault further discloses imparting a first spatial cue 16<sub>1</sub>, which produces a right and left signal. Begault further discloses receiving a second radio transmission with a second carrier frequency  $f_2$  wherein a second special cue 16<sub>2</sub> is applied and produces a second right and left signal. Begault further discloses providing the first and second right audio signal to a right channel summer to distribute to a right channel output (headphone speaker) and a first and second left audio signal to a left channel summer to distribute

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to a left channel output (headphone speaker). Begault further discloses a context switching system that spatially separates multiple sound sources into different point sources so that a primary audio stream of interest can be easily differentiated from peripherally monitored audio streams of secondary interest (col. 1-lines 49-56). Begault further discloses a person can listen to voicemail while continuing to monitor an ongoing discussion in a conference call (col. 2-lines 13-16). Therefore it is inherent to one of ordinary skill in the art that this would provide sufficient differentiation between the first and second audio signals for the listener to distinguish between them wherein the listener could focus on the primary source over the secondary source. Further, when listening to voicemail and a conference call via a telephone line, position is not a factor as they are both being transmitted over the line. Begault merely uses the "foreground" and "background" terms as terms of priority not of position thus providing the differentiation cue one of a higher magnitude playback level (col. 2-lines 63-67 and col. 3-lines 1-14). Begault further discloses one of the audio inputs as being, for example an input via a conference call, which would therefore include an input from a microphone coupled to the communication system.

Regarding **claim 9**, Begault discloses imposing spatial cues to a plurality of audio inputs. Begault further discloses 10<sub>1</sub>-10<sub>4</sub> as a plurality of separate devices capable of receiving four separate audio signals for example, four different radio communications channel frequencies (col. 3-lines 41-46). Therefore Begault reads on receiving a first radio transmission, at a first carrier frequency f<sub>1</sub> (see figure 1) and thus reads on an audio signal provided via a radio receiver. Begault further discloses imparting a first

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spatial cue  $16_1$ , which produces a right and left signal. Begault further discloses receiving a second radio transmission with a second carrier frequency  $f_2$  wherein a second special cue  $16_2$  is applied and produces a second right and left signal. Begault further discloses providing the first and second right audio signal to a right channel summer to distribute to a right channel output (headphone speaker) and a first and second left audio signal to a left channel summer to distribute to a left channel output (headphone speaker). Begault further discloses a context switching system that spatially separates multiple sound sources into different point sources so that a primary audio stream of interest can be easily differentiated from peripherally monitored audio streams of secondary interest (col. 1-lines 49-56). Begault further discloses a person can listen to voicemail while continuing to monitor an ongoing discussion in a conference call (col. 2-lines 13-16). Therefore it is inherent to one of ordinary skill in the art that this would provide sufficient differentiation between the first and second audio signals for the listener to distinguish between them wherein the listener could focus on the primary source over the secondary source. Further, when listening to voicemail and a conference call via a telephone line, position is not a factor as they are both being transmitted over the line. Begault merely uses the "foreground" and "background" terms as terms of priority not of position thus providing the differentiation cue one of a higher magnitude playback level (col. 2-lines 63-67 and col. 3-lines 1-14).

Regarding **claim 15**, Begault discloses imposing spatial cues to a plurality of audio inputs. Begault further discloses  $10_1$ - $10_4$  as a plurality of separate devices capable of receiving four separate audio signals for example, four different radio



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communications channel frequencies (col. 3-lines 41-46). Therefore Begault reads on receiving a first radio transmission, at a first carrier frequency  $f_1$  (see figure 1). The demodulation is inherently taught as an audio signal is produced as an audio signal is received via the headset. Begault further discloses imparting a first spatial cue 16<sub>1</sub>, which produces a right and left signal. Begault further discloses a person can listen to voicemail while continuing to monitor an ongoing discussion in a conference call (col. 2-lines 13-16). Therefore it is inherent to one of ordinary skill in the art that this would provide sufficient differentiation between the first and second audio signals for the listener to distinguish between them wherein the listener could focus on the primary source over the secondary source. Further, when listening to voicemail and a conference call via a telephone line, position is not a factor as they are both being transmitted over the line. Begault merely uses the "foreground" and "background" terms as terms of priority not of position thus providing the differentiation cue one of a higher magnitude playback level (col. 2-lines 63-67 and col. 3-lines 1-14).

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 3, 5 and 14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Begault (US Patent No. 5,438,623).

Regarding **claim 3**, Begault fails to specifically disclose the continuous broadcast as a weather report broadcast. However, weather broadcasts are a well known radio communication channel and therefore it would have been obvious to one of ordinary skill in the art to use the weather broadcast as the continuous broadcast to be aware of updated weather changes.

Regarding **claim 5**, Begault discloses imparting different spatial cues wherein using HRTF generates separate perceptions of the channels due to the virtual sound locations. The differences in locations in relation to the listener's head provide a detected amplitude difference and which the applicant recognizes as known in the art and stated in the disclosure (page 6-lines 10-13). Therefore it would have been obvious to one of ordinary skill in the art to provide an amplitude difference of the separate channels through the use the HRTF for the spatial cues.

Regarding **claim 14**, Begault discloses imposing spatial cues to a plurality of audio inputs. Begault further discloses 10<sub>1</sub>-10<sub>4</sub> as a plurality of separate devices capable of receiving four separate audio signals for example, four different radio communications channel frequencies (col. 3-lines 41-46). Therefore Begault reads on receiving a first radio transmission, at a first carrier frequency  $f_1$  (see figure 1). Begault further discloses imparting a first spatial cue 16<sub>1</sub>, which produces a right and left signal. Begault further discloses receiving a second radio transmission with a second carrier frequency  $f_2$  wherein the first right, first left and the second audio signal are combined in the summers. The second audio signal is claimed broadly wherein the second audio's components are in fact combined with the first right and first left audio signals. Begault

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further discloses a context switching system that spatially separates multiple sound sources into different point sources so that a primary audio stream of interest can be easily differentiated from peripherally monitored audio streams of secondary interest (col. 1-lines 49-56). Begault further discloses a person can listen to voicemail while continuing to monitor an ongoing discussion in a conference call (col. 2-lines 13-16). Therefore it is inherent to one of ordinary skill in the art that this would provide sufficient differentiation between the first and second audio signals for the listener to distinguish between them wherein the listener could focus on the primary source over the secondary source. Further, when listening to voicemail and a conference call via a telephone line, position is not a factor as they are both being transmitted over the line. Begault merely uses the "foreground" and "background" terms as terms of priority not of position thus providing the differentiation cue one of a higher magnitude playback level (col. 2-lines 63-67 and col. 3-lines 1-14).

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. **Claims 1, 7, 8, 9, 12, 14, 15, 16** are rejected under 35 U.S.C. 103(a) as being unpatentable over Begault (US Patent No. 5,438,623) in view of Kinoshita et al. (US Patent No. 5,734,724).

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Regarding **claims 1, 7, 8, 9, 12, 14, 15, 16**, Regarding **claim 1**, Begault discloses imposing spatial cues to a plurality of audio inputs. Begault further discloses 10<sub>1</sub>-10<sub>4</sub> as a plurality of separate devices capable of receiving four separate audio signals for example, four different radio communications channel frequencies (col. 3-lines 41-46). Therefore Begault reads on receiving a first radio transmission, at a first carrier frequency f<sub>1</sub> (see figure 1). Begault further discloses imparting a first spatial cue 16<sub>1</sub>, which produces a right and left signal. Begault further discloses receiving a second radio transmission with a second carrier frequency f<sub>2</sub> wherein a second special cue 16<sub>2</sub> is applied and produces a second right and left signal. Begault further discloses providing the first and second right audio signal to a right channel summer to distribute to a right transducer (headphone speaker) and a first and second left audio signal to a left channel summer to distribute to a left transducer (headphone speaker). Begault further discloses a context switching system that separates multiple sound sources into different point sources so that a primary audio stream of interest can be easily differentiated from peripherally monitored audio streams of secondary interest (col. 1-lines 49-56). Begault further discloses a person can listen to voicemail while continuing to monitor an ongoing discussion in a conference call (col. 2-lines 13-16). Therefore it is inherent to one of ordinary skill in the art that this would provide "sufficient" differentiation between the first and second audio signals for the listener to distinguish between them wherein the listener could focus on the primary source over the secondary source. Further, when listening to voicemail and a conference call via a telephone line, position is not a factor as they are both being transmitted via one line.

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Begault merely uses the terms "foreground" and "background" as terms of priority not of location of sound, thus providing a differentiation cue for providing a higher magnitude playback level for one of higher priority (col. 2-lines 63-67 and col. 3-lines 1-14).

Kinoshita et al. (hereinafter, ' Kinoshita ') discloses a need for providing techniques to improve the intelligibility for a listener in which it is difficult to distinguish multiple speakers wherein more than one signal is simultaneous and refers to Begault (col. 1-lines 25-48). Kinoshita further provides other methods to be used, which include, level attenuation, amplification, delays phases and transfer functions (col. 5-lines 36-45). It would have been obvious to one of ordinary skill in the art to provide a differentiation cue for the purpose of providing a user to distinguish the signals more easily and wherein the differentiation cue is provided by a number of methods, and wherein a various of different methods are disclosed by Begault and Kinoshita. It would have been obvious to one of ordinary skill in the art to incorporate any type of input signal wherein a listener is listening to more that one signal simultaneously thus requiring one of the many potential application of the cues for easy distinction between the signals. Begault and Kinoshita disclose many inputs, which include but would certainly not be limited to, radio communication, telephone and conference lines and voicemail and would therefore be output to speakers and headphones simultaneously.

10. Claims 18-22 are allowed.

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11. Claims 6,10,11,13 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth A. McChesney whose telephone number is (703) 308-4563. The examiner can normally be reached Monday – Friday, 8:00 am – 4:30 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W. Isen can be reached on (703) 305-4386.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**Or faxed to:**

**(703) 872-9314 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

EAM *gmu*  
February 8, 2004

*Isen*  
*SPE, AU 2644*